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NOTES ON A COLLECTION OF REPTILES AND AMPHIBIANS
FROM GUATEMALA*

II
LIZARDS

BY

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In a previous paper¹ the author has discussed the snakes taken during the spring of 1924 and of 1926, enumerating the various localities worked along the trans-Guatemalan railway. It is now proposed to treat of the lizards, and the reader is referred to the above mentioned paper for the list and descriptions of the localities visited.

My thanks are due Dr. Thomas Barbour who identified that very difficult group, the anoles, and to Drs. Hobart Smith and Charles E. Burt who worked on the lizards of the genera *Sceloporus* and *Cnemidophorus* respectively.

The material on which the present paper is based includes eleven genera, and twenty-two species; 2,263 specimens in all.

The anoles appeared to be the most abundant of the Guatemalan lizards and shared with those of the genera *Sceloporus* and *Ameiva* the distinction of having the greatest range in altitude. While both of these genera were found at sea-level in the vicinity of Champerico, *Ameiva* extended its range to an elevation of 5000 feet on the slopes of the Volcan Agua, and *Sceloporus* to 10,000 feet at Santa Elena. The remaining genera, with the exception of *Gerrhonotus*, a strictly highland lizard, were taken in a belt from sea-level to an elevation 2,000 feet.

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Anolis biporcatus Wiegmann

This species is represented by one hundred and twenty-two specimens; 66, Nos. 67050-67115, from Quirigua; six, Nos. 67116, 67118, 67119, 67122, 67168 and 67169, from Mazatenango; 49, Nos. 67117, 67120, 67121, 67123, 67125-67167, 67170 and 67171, from Volcan Zunil, and a single specimen, No. 67124, from Champerico.

It was found commonly on the banana trees and more sparingly on vines entwined about wire fences. Like all the lizards of this genus it proved to be very active and when thoroughly frightened was difficult to catch, as it made leaps of from two to three feet about the dense undergrowth. It appeared to be a characteristic habit of the anoles that on leaping from one limb to another and alighting head upwards the lizard invariably turned about and faced head down.

In life the ground color of *Anolis biporcatus* is golden-brown, covered with dark markings or reticulations, and may or may not have a wide vertebral stripe. No. 67053 in the above series had a wide dorsal stripe of deep orange, bordered with a very narrow stripe of lemon-yellow and extending from the back of the head on to the base of the tail, where it tapered to a point. The dewlap is blood-orange.

Anolis cupreus Hallowell

An abundant species on the banana trees planted to shade the cafetals on Finca El Cipres, where four hundred and three specimens, Nos. 67599-68001, were collected. Eight specimens, Nos. 67591-67598, were taken on banana trees at Quirigua. Although a small species it was easily found as it frequented the trunks of banana trees and was more or less in the open, confining itself to the trunks of the trees or to dead leaves hanging loosely about the trunks.

In life the ground color is light brown, occasionally with darker markings and a pale yellow vertebral stripe. The dewlap is rather small and a uniform pale yellow.

Anolis godmani Boulenger

An inhabitant of the coffee and banana belts, this species was not found in such numbers as some of the others, only fifty-eight specimens being taken as follows: 48, Nos. 67172-67219, from Quirigua; nine, Nos. 67221-67229, from Volcan Zunil, and a single specimen, No. 67220, from Mazatenango. These lizards were more partial to the vines entwining fences than to the banana trees, and were not disposed to show themselves in the open. The species is no doubt just as abundant as those taken in larger series, but, owing to its small size and more secretive habits, is not so readily seen in the green foliage and heavy undergrowth.

In life the ground color is greenish, with occasional dorsal spots of brown and a dark band between the eyes. The dewlap is light orange. Alcoholic specimens show none of the delicate green ground color.

Anolis humilis Peters

Although thirteen days were spent at Quirigua and one hundred and thirty-one anoles were collected, only two specimens, Nos. 68217-68218, of this species were found. Both were taken on banana trees on the Nahua Ranch of the United Fruit Company. The dorsal coloration is uniform brown. The dewlap is quite small and purplish in color.

Anolis petersii Bocourt

During an extended stay at Finca El Cipres this species was not encountered, but my host, Señor Juan Posadas, presented me with three specimens; two, Nos. 68214-68215, from Mazatenango, and one, No. 68216, from his plantation on the slopes of Volcan Zunil. Possibly the reason for not finding this species was seasonal as the specimen from Volcan Zunil was taken in the month of December, a season in which I did not collect.

Anolis sallaei Günther

Anolis sallaei was found to be a common species. It inhabits dense foliage and were it not for its brilliantly colored dewlap, its long tail and its unusual activity, it might not be easily detected. It likes the warmth of the sun, and when seen perched upon a leaf or twig with its large orange dewlap, centered with a spot of indigo-blue, extended to full size it becomes very conspicuous against a background of light green. A series of two hundred and nine specimens are from the following localities: Nos. 68002-68017, Quirigua; Nos. 68038-68041, Champerico; Nos. 68199-68208, Los Patos River; Nos. 68198, 68022-68032, Mazatenango; Nos. 68018-68021, 68033, 68036-68037, 68042-68197, 68209-68213, Volcan Zunil.

In life this species is one of the most beautifully colored of the Guatemalan anoles being a rich, clear, golden-yellow and occasionally having a heavy, lemon colored vertebral stripe. As mentioned above the dewlap is orange, with a central spot of indigo-blue.

Anolis uniformis Cope

This species appeared to be confined to the highlands and was particularly abundant at Chichivac, above Tecpan. A single patch of tall grass situated on an open hillside was the source of a series of three hundred and fifty-three specimens, Nos. 67238-67590. Upon

pulling apart the clumps of grass the lizards were found clinging to the blades a foot or two above the ground. A single specimen, No. 67237, was taken at an elevation of 6,800 feet in a small clump of weeds in a cornfield at the edge of the rain forest above San Antonio. Seven specimens, Nos. 67230-67236, were taken in similar situations on the slopes of the Volcan Agua.

In life the ground color is brownish, and a broad vertebral band of yellow, with a narrow black border, is occasionally present. The dewlap is a rich orange color.

***Basiliscus vittatus* Wiegmann**

This proved to be a common and widely distributed species, a total of ninety-one being taken as follows: Nos. 69185-69194, San Antonio; Nos. 69195-69227, Quirigua; Nos. 69228-69247, 69258-69262, 69274-69275, Volcan Zunil; Nos. 69248-69256, Mazatenango; No. 69257, Champerico; Nos. 69263-69273, Los Patos River.

With the exception of those taken at San Antonio, all were found on the banks of streams or in very close proximity to water, the San Antonio specimens being taken in trees bordering a road, the nearest water being a hundred yards or more away. An extremely wary lizard it would keep in the heavy growth of vines bordering the streams, and at the slightest disturbance it would leap into the water, or seek the denser foliage where it would be lost to view. The present series shows no variation in color, the brownish-olive ground color, with a yellow lateral stripe, being constant. Its native name is *Cotate*.

***Iguana iguana rhinolopha* (Wiegmann)**

This species was found more commonly in the rain forest areas, though it also inhabits the arid country about Progreso. A great many individuals were seen but on account of its large size only a few were taken. The series is as follows: No. 69312, Progreso; Nos. 69313-69315, Volcan Zunil; No. 69311, Quirigua. The latter was found stretched at full length on the top of a high hedge.

Although brilliantly marked with white and black bands on a ground color of light green it is not so easily detected in its native habitat, the heavy foliage and high trees of the tropical forests.

***Ctenosaura palearis* Stejneger**

A common species about Progreso, where it was found high up in the tall trees. A series of fourteen specimens, Nos. 69297-69310, was taken. Juveniles, in life, are bright green, the black bars and grayish sides of the adults are not evident until the lizard attains a considerable size.

Ctenosaura similis (Gray)

This species was found to be fairly abundant on both sides of the plateau, but on account of its large size the series had to be limited. Twenty-one specimens were taken as follows: Nos. 69276-69286, Progreso; Nos. 69287-69290, Los Patos River; Nos. 69291-69296, Champerico. At Progreso and Champerico they were found in trees and at Los Patos River in the tiled roofs of houses. Young individuals are bright green, as in the former species, changing to the characteristic greenish-gray later in life, the tail then becomes ringed and the body barred with black.

Sceloporus acanthinus Bocourt

Found only in clearings in the rain-forest, and is represented by five specimens as follows: Nos. 68389-68390, Mazatenango; Nos. 71403-71404, Volcan Zunil; No. 68931, Los Patos River. The two specimens from Mazatenango were taken in dense rain-forest country and were found some fifteen feet above the ground running about the trunk of a giant Ceiba tree. The one from Los Patos River was taken on a fence post in a clearing of virgin jungle.

The males of this species, in life, are metallic bluish-green on the dorsal surface. The undersurface of the body and throat is blue, that of the hind limbs and tail being yellowish, with a tinge of green. A black collar completely encircles the neck. The females do not attain the brilliancy of the adult males, having a dorsal ground color of brown. A collar is present, but does not meet on the throat. The undersurfaces are yellowish, the throat being clouded with dark gray. The femoral pores in the five specimens range from twelve to fifteen.

Sceloporus formosus smaragdinus Bocourt

A common species in the highlands where one hundred and twenty-seven specimens were collected as follows: 17, Nos. 68219-68235, Volcan Agua; 55, Nos. 68236-68290, San Antonio; 55, Nos. 68291-68345, five miles north of Tecpan; two, Nos. 68392-68393, Santa Elena. At San Antonio and the Volcan Agua it was found on rock fences which enclosed large stretches of open country, while about the vicinity north of Tecpan it was equally divided between rocky situations and solitary trees close to heavily wooded areas.

A male, No. 68225, from Volcan Agua, was colored in life as follows: Dorsal surface and upper surface of limbs light green; tail bottle-green above to lighter green on the sides and undersurface; top of head brownish; a black shoulder patch; a black collar extending across the throat; throat light blue; undersurface between limbs light blue, with two longitudinal bands of black separated by a line of greenish-yellow; undersurface of tail yellowish.

The femoral pores in 212 thighs are as follows:

<i>Pores</i>	<i>Thighs</i>
11	2
12	9
13	25
14	60
15	73
16	26
17	17

Sceloporus siniferus Cope

Found only on the seacoast, where eighteen specimens, Nos. 68358-68375, were collected along an open road cut through what was formerly heavy rain forest in the vicinity of Champerico. It appeared to be strictly terrestrial in its habits, never getting farther off the ground than the top of a rock or small boulder.

The ground color, like in its near relative *S. squamosus*, is reddish-brown, a lateral stripe of yellow one to one and one-half scales wide extending from the back of the head to the base of the tail. A pronounced black spot over the shoulder is usually present. The area between the lateral lines may be clear or have a series of black spots on each side. The sides may be either with or without black spots. The undersurfaces are grayish, the throat sometimes being clouded with dark gray and having a series of longitudinal white stripes.

The femoral pores in thirty-five thighs vary from four to six; being four 12 times, five 18 times, and six five times.

Sceloporus squamosus Bocourt

A species found both in the highland country, at the base of the Volcan Agua, and in the desert area about Progreso. It was not common in either locality, only eleven specimens, Nos. 68346-68356, being taken at the former locality and two, Nos. 68357, 68376, at the latter. At the Volcan Agua it was seen in corn fields on the lower slopes of the mountain, and at Progreso along the side of a trail leading from open country to a wooded and rocky area.

The ground color is a dark reddish-brown, with a whitish lateral line one scale in width extending from the back of the head to the base of the tail. A series of black spots extends down the back, the posterior borders of which have a light edge. The sides are spotted with white and the undersurfaces are grayish.

The femoral pores in twenty-six thighs range from five to seven; being five 9 times, six 14 times, and seven 3 times.

Sceloporus variabilis variabilis Wiegmann

This species was found only at Progreso, where a small series, Nos. 68377-68388, was taken. It was confined to rocky situations along trails and roads in the higher portions of the desert-like areas. There is apparently no difference in coloration from those collected farther to the north in the states of Oaxaca and Vera Cruz, Mexico.

A male, in life, showed a dorsal ground color of light brown, with scattered blue and yellow spots and a dorsolateral stripe of light brown. The upper surface of the limbs was blackish and of the tail light gray to pink. The belly had two large patches of pink, edged with blue, and separated by a median line of white. Two black shoulder patches were bordered in front by a line of light yellow.

Femoral pores in the above series vary from six to thirteen; being six two times, eight two times, nine four times, ten seven times, eleven seven times, twelve two times, and thirteen once.

Gerrhonotus moreletii Bocourt

Strictly confined to the highlands this species was found to be common at Chichivac, where eighty specimens, Nos. 68394-68473, were taken in the surrounding forest that had been cut over for timber. Their habitat was under debris on the forest floor and under the loose bark of dead trees and old stumps. Five specimens, Nos. 68474-68478, were taken at Santa Elena under similar conditions. An examination of eighty-four specimens shows a contact between the frontonasal and frontal, a partial separation in three, and a complete separation in one. No. 68419 shows a complete separation. No. 68402 has the prefrontal on the left side forming a narrow suture, and No. 68436 a practically complete separation, the prefrontals terminating in a point which contacts the frontonasal. Scale rows are eighteen in 71 specimens and twenty in 14.

The dorsal coloration is dark brown, spotted with black. The undersurfaces are greenish-white. Juveniles show darker sides and less spotting on the dorsal surface.

Lepidophyma flavomaculatum flavomaculatum Duméril

This species is strictly confined to the rain-forest. Twenty-eight specimens were taken as follows: Four, Nos. 68479-68482, from Quirigua; three, Nos. 68483, 68505, 68506, from Volcan Zunil; and twenty-one, Nos. 68484-68504, from Mazatenango.

With the exception of a single specimen (No. 68482) found in a crack between two stones, part of the wall of a large ruin near Quirigua, all were found under debris on the forest floor or in decaying logs. The old logs sought by these lizards were on the floor of the rain forest, thoroughly soaked from the heavy rains and covered with vines and moss. The interiors were honeycombed

with termite tunnels, and an examination of the stomachs of the lizards showed that termites formed their principal food.

In life the ground color is a rich brown, the dorsal surface being covered with yellowish spots. The undersurfaces are whitish.

Ameiva undulata parva Barbour and Noble

A common lizard and found abundantly from the low country to the higher elevations at the base of the Volcan Agua, but very rare in the drier desert area about Progreso. In the coffee districts it was usually found running about the cafetals in search of food and in the wet, humid belt about Quirigua it was a conspicuous lizard amongst the banana trees. A total of two hundred and eighty-eight specimens was taken as follows: Nos. 68629-68662, Volcan Agua; Nos. 68663-68733, San Antonio; Nos. 68734-68765, Quirigua; Nos. 68766-68844, Volcan Zunil; Nos. 68845-68865, Mazatenango; Nos. 68866-68867, Champerico; Nos. 68868-68914, Los Patos River; Nos. 68915-68916, Progreso.

Specimen No. 68671, from San Antonio, was colored, in life, as follows: A wide brownish dorsal band extended from the back of the head to the base of the tail, with black bars between limbs broken on median line; top of tail light brown, with black spots at base; top of head brown; top of limbs brown, mottled with black; sides of head and the gular region lemon-yellow; sides between limbs sky-blue; belly, undersurface of hind limbs and tail sky-blue; undersurface of front limbs yellowish.

The color of the gular region in this species varies and may be lemon-yellow, orange, or brick-red.

The femoral pores in 572 thighs vary from eleven to twenty-one as follows:

<i>Pores</i>	<i>Thighs</i>
11	2
12	6
13	30
14	68
15	105
16	119
17	101
18	76
19	42
20	21
21	2

Cnemidophorus deppii deppii (Weigmann)

An abundant species at Progreso, where one hundred and thirteen specimens, Nos. 68917-69029, were taken. All were found in cactus fences along open roads. The entire series, with the exception of fourteen individuals which have the dorsal lines fused so as to form

a single wide one, have ten longitudinal lines. The supraoculars are three in all but six specimens, two of which have the front plate divided, one the left middle plate, one the right middle plate, and one the middle plate on both sides.

The dorsal coloration, in life, is black or greenish, occasionally with a reddish tinge between the first two lateral lines. The under-surface of the tail and hind limbs is yellowish. In males the belly and throat are bluish-black, the females being yellowish, with a slight green tinge.

Femoral pores in 223 thighs vary from 16 to 22 as follows:

Pores	Thighs
16	7
17	42
18	64
19	62
20	34
21	13
22	1

Cnemidophorus sexlineatus gularis (Baird and Girard)

The most abundant lizard in the vicinity of Progreso, where it was found in common with *C. deppii deppii*. A series of one hundred and fifty-five specimens, Nos. 69030-69184, was taken. These Guatemalan specimens of *C. s. gularis* are uniformly large and rival *C. maximus* in size. Although these lizards were found not to be particularly shy there was always a cactus fence in sight in which to take cover, and nothing could give them better protection.

The color pattern in the above series is uniform throughout. Stripes are absent and the dorsal coloration is grayish-brown, with numerous small white spots, which are also present on the upper surface of the limbs. The undersurfaces are greenish-white, the belly being suffused with indigo-blue.

In one hundred and fifty-four specimens the femoral pores vary from 20 to 27 as follows:

Pores	Thighs
20	3
21	26
22	85
23	78
24	75
25	35
26	5
27	1

Mabuia agilis (Raddi)

This species was found in both the rain forest and the drier desert areas, and was taken from sea-level at Champerico to 2,000 feet at Volcan Zunil. In the lowlands at Champerico and Los

Patos River it was seen along wire fences in more or less open country, and in the rain-forest area in old stumps and under stones. It was not common, and only twenty-one specimens were collected, as follows: Nos. 68608-68609, Progreso; Nos. 68610-68611, Champerico; Nos. 68612-68613, Mazatenango; Nos. 68614-68616, Volcan Zunil; Nos. 68617-68628, Los Patos River.

In life the dorsal area is metallic bronze in color. A wide lateral band of dark brown extends from the snout to the groin, and is bordered above by a wide grayish line and below by a thin white one. The undersurfaces are whitish.

***Leiopisma assatum assatum* (Cope)**

This skink proved to be one of the most abundant lizards at Finca El Cipres, where one hundred and one specimens, Nos. 68507-68607, were collected. All were dug out of piles of earth in the cafetals. None was ever seen in the open.

In life the dorsal surface is brownish, the scales with dark brown centers, tending to form longitudinal lines. A black band extends along the side of the head and neck to the shoulder. The labials are whitish, spotted with brown. The undersurfaces are whitish.